

REMARKS

Upon entry of this Reply (Request for Reconsideration), claims 1 and 3-18 will be pending in the application. Claims 1 and 3-18 stand rejected under Section 103 as being unpatentable over a combination of U.S. patents. Reconsideration of the rejections and allowance of the pending application in view of the following remarks is respectfully requested and believed to be appropriate.

The outstanding Final Office Action substantially repeats the same rejections made in the Office Action of January 26, 2006, except that it introduces a further patent, U.S. Patent No. 5,734,427 to Kenkichi Hayashi (hereinafter referred to as "HAYASHI"), in the rejections. Currently, claims 10 and 13-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,593,965 to Keisuke Miyamoto (hereinafter referred to as "MIYAMOTO") in view of U.S. Patent No. 5,912,708 to Tetsujiro Kondo, *et al.* (hereinafter referred to as "KONDO") and further in view of HAYASHI. Claims 1, 3-9, 11, and 12 stand rejected over MIYAMOTO in view of KONDO, in further view of U.S. Patent No. 5,900,623 to Randy P.L. Tsang, *et al.* (hereinafter referred to as "TSANG") in further view of HAYASHI. Applicant respectfully traverses each of the outstanding rejections and requests that the Examiner reconsider and withdraw the same. Applicant further requests that the Examiner indicate allowability of all pending claims (claims 1 and 3-18) in the next correspondence from the U.S. Patent and Trademark Office, and believes that such action is appropriate at this time.

Referring to the Section 103 rejection of claims 10 and 13-18, Applicant submits that the outstanding Final Office Action has failed to establish a *prima facie* case of

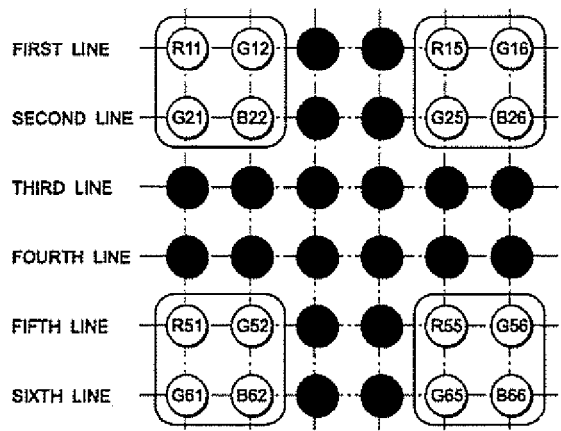
obviousness because one of ordinary skill in the art would not have been motivated to combine MIYAMOTO with KONDO and HAYASHI as proposed by the Examiner. Furthermore, even if such a combination were *arguendo* possible, the resultant combination system would still fail to teach all of the recitations of at least the independent claims 10 and 13, or any of the other pending claims.

Referring, for example, to Figures 2 and 4 and the corresponding text, MIYAMOTO teaches two embodiments for carrying out his invention. In the first embodiment, *i.e.* Fig. 2, MIYAMOTO teaches using an interpolation system that reduces an original image by averaging four color pixel values for each color to derive a single pixel data. See, *e.g.*, column 4, line 17 through column 5, line 6, MIYAMOTO. In his second embodiment, MIYAMOTO teaches that his "pixel interpolation circuit 12 transmits no more than the first, second, fifth, and sixth lines of pixel data from the CCD" (see column 5, lines 24-26, MIYAMOTO). MIYAMOTO's two embodiments are mutually exclusive.

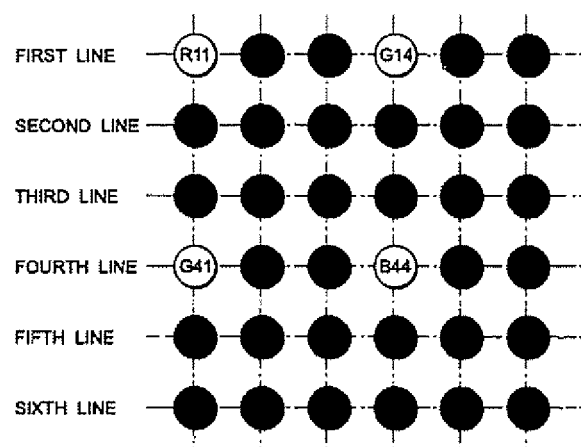
At page 8 of the outstanding Final Office Action, the Examiner states that MIYAMOTO shows that the thinning processor thins out $(m \times (n-1))$ number of pixel data for every $(m \times n)$ number of pixel data in horizontal and vertical directions. Particularly, the Examiner sets forth an example where $m = n = 2$ in MIYAMOTO and the thinning processor thins out two pixel data for every four pixel data. Applicant submits that in the example posited by the Examiner the resultant pixels, after the thinning out process, are not uniformly distributed, but are distributed such that two pixels are arranged adjacent to each other while simultaneously being separated by two pixels from the next

grouping of adjacent pixels as shown in a cropped and modified representation of Figure 3 from MIYAMOTO shown below.

Conversely, according to an aspect of the present invention, after the thinning out process, the resultant pixels are distributed such that each of the pixels is separated from every other pixel by at least one pixel. Moreover, an arrangement of color components of the thinned image data is identical with that of the original image data as shown in the illustration below. See, for example, claim 10, which recites, *inter alia*, "wherein each pixel in the thinned pixel data is separated from each pixel by at least one pixel data", and claim 13, which recites, *inter alia*, "wherein each pixel in the thinned image is separated from each other pixel by at least one pixel." See also claim 10, which further recites, *inter alia*, "wherein said colors of said original image data are arranged in such a manner that a (m x m) matrix, formed by said plurality of colors, is repeated."



Cropped & Modified FIG. 3, MIYAMOTO



Thinned Out Pixel Data According to An Aspect of The Invention

KONDO teaches a concept of pixel thinning akin to the above noted first embodiment of MIYAMOTO. Referring, e.g., to column 12, lines 53-58, as well as Figures 8 and 9, KONDO teaches dividing an "HD picture into square blocks consisting

of three horizontal pixels x three vertical pixels, that is, nine pixels, and ... [using] the average value of several pixels ... of the individual blocks as the pixel value of the center pixel, thereby forming the SD picture." Moreover, the first and second embodiments of MIYAMOTO are not additive, but alternative. If one were to attempt to combine KONDO with MIYAMOTO, the ordinary skilled artisan would have been quick to recognize that such a combination would destroy the spirit and scope of the MIYAMOTO patent and would therefore have not been obvious.

MIYAMOTO, in no uncertain terms, teaches that his invention was created to avoid having to store multiple rows of image data in order to average pixel data for a given color across an array of color pixels, which is exactly what KONDO would suggest if applied to the color pixel array in MIYAMOTO. See, *e.g.*, column 1, lines 46 *et seq.*, MIYAMOTO. Thus, any attempt to combine MIYAMOTO with KONDO, assuming *arguendo* that such a combination were possible (Applicant submits it was not), would result in a combination system that would take pixels, *e.g.*, R11, R15, R51 and R55 in Figure 3 of MIYAMOTO, and average their values to derive a value for a generated, virtual pixel that would be located at the midpoint of the matrix shown in Figure 3 of MIYAMOTO. This, for the most part is how the disclosed prior art of MIYAMOTO, *i.e.* Figure 7, functioned. Hence, this combination, is exactly what MIYAMOTO was trying to avoid in the first place, in designing a system that reduced memory requirements. See, *e.g.*, column 1, line 46 to column 2, line 2, MIYAMOTO. Thus MIYAMOTO expressly teaches away from the Examiner's proposed combination.

In the outstanding Final Office Action, the Examiner has **not** responded to Applicant's argument that the ordinary skilled artisan would not have been motivated to

combine MIYAMOTO and KONDO because such a combination would have destroyed the MIYAMOTO invention. Since a *prima facie* case of obviousness requires that the Examiner show, *inter alia*, motivation for combining references under a Section 103 rejection, and Applicant has shown (without any rebuttal by the Examiner) that no motivation existed to combine the MIYAMOTO and KONDO teachings as posited by the Examiner, no *prima facie* case of obviousness has been made by the Examiner. Thus, Applicant submits that the rejection is improper and should therefore be withdrawn.

HAYASHI, which was introduced for the first time in the outstanding Final Office Action, does not make up for the deficiencies of MIYAMOTO and KONDO. For example, HAYASHI does not teach or suggest a manner of modifying MIYAMOTO and KONDO in order to make the two systems compatible with each other without destroying the MIYAMOTO system. HAYASHI appears to be relied on by the Examiner only to show that it was known to match a video resolution of a signal output to a monitor with the display resolution of the monitor. Since MIYAMOTO and KONDO are, without contest by the Examiner, incompatible and HAYASHI does not render, or suggest a manner of rendering, the MIYAMOTO and KONDO systems compatible without destroying the MIYAMOTO system, the ordinary skilled artisan would not have been motivated to combine MIYAMOTO and KONDO, much less HAYASHI.

Next, assuming *arugendo* that the combination of MIYAMOTO, KONDO, and HAYASHI as posited by the Examiner in the outstanding Office Action, were possible and/or proper, and Applicant submits that it was not, the combined system would still fail to teach or suggest the recitations of at least independent claims 10 and 13. Namely, any combination of MIYAMOTO, KONDO and/or HAYASHI would not teach or suggest,

inter alia, "wherein each pixel in the thinned pixel data is separated from each pixel by at least one pixel, and wherein said colors of said original image data are arranged in such a manner that a (m x m) matrix, formed by said plurality of colors, is repeated" as recited in claim 10, or, *inter alia*, "wherein each pixel in the thinned image is separated from each other pixel by at least one pixel" as recited in claim 13. Thus, Applicant respectfully requests reconsideration and withdrawal of the rejection of at least independent claims 10 and 13 (and dependent claims 14-18), and an early indication of allowability of the claimed subject matter.

Referring to the Section 103 rejection of claims 1-9, 11 and 12, in the above noted outstanding Final Office Action of July 14, 2006, as being unpatentable over MIYAMOTO in view of KONDO, further in view of TSANG, and further in view of HAYASHI, Applicant traverses these rejections and respectfully requests withdrawal and allowance of all pending claims.

Applicant submits the Examiner has failed to establish a *prima facie* case of obviousness. This rejection is based, *i.e.*, in part, on the combination of MIYAMOTO and KONDO, which has been shown above to be improper for lack of motivation to combine. The third and fourth references, the patents to TSANG and HAYASHI, fail to correct this inadequacy.

As discussed in detail above with respect to claims 10 and 13-18, MIYAMOTO explicitly teaches away from the Examiner's posited combination with KONDO. Additionally, even if, *arguendo*, such a combination were possible (Applicant submits that it was not) the combination of MIYAMOTO and KONDO would still fail to teach or suggest, alone or in any proper combination, all of the recitations of claims 1-9, 11 and

12. Moreover, TSANG and/or HAYASHI fail to cure the inadequacy of such a posited combination.

For example, independent claim 1 recites, *inter alia*, "wherein said colors of said original image data are arranged in such a manner that a $(m \times m)$ matrix, formed by said plurality of colors, is repeated, and said thinning processor thins out $(m \times (n-1))$ number of pixel data for every $(m \times (n-1)+1)$ number of pixel data in a horizontal direction and a vertical direction of an image corresponding to said original image data, wherein each of "m" and "n" is a positive integer greater than 1." Applicant submits that none of MIYAMOTO, KONDO, TSANG, or HAYASHI teach or suggest, alone or in combination, *inter alia*, the noted recitations of claim 1.

Independent claims 1, 10 and 13 are in condition for allowance in view of the above-noted remarks. Dependent claims 3-9, 11, 12 and 14-18 are also submitted to be in condition for allowance at least in view of their dependence from the allowable base claims and further based upon their recitations of additional features of the present invention.

Based on the above, it is respectfully submitted that this application is now in condition for allowance, and a Notice of Allowance is respectfully requested.

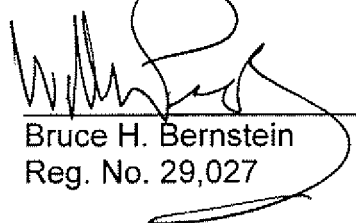
SUMMARY AND CONCLUSION

Applicant notes that this Reply is being made to advance prosecution of the application to allowance, and no acquiescence as to the propriety of the Examiner's rejections is made by the present Reply. Rather for reasons set forth, Applicant traverses the outstanding rejections as improper. Applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and allow the case to issue to a U.S. patent with all currently pending claims. Allowance of the above captioned application, including all pending claims, to issue to a patent is believed to appropriate for at least the reasons set forth above.

Applicant further notes the status of the present application as being an after final rejection and with respect to such status believes that there is a clear basis for the entry of the present Reply consistent with 37 C.F.R. § 1.116. Accordingly, Applicant respectfully requests entry of the present Reply in accordance with the provisions of 37 C.F.R. § 1.116.

Should the Examiner have any questions or comments regarding this response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
Koichi SATO



Bruce H. Bernstein
Reg. No. 29,027

William Pieprz
Reg. No. 33,630

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GREENBLUM & BERNSTEIN, P.L.C.
1950 Roland Clarke Place
Reston, VA 20191
(703) 716-1191